



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/673,760	09/29/2003	Mark McCormick	700706.90203	1470

26734 7590 12/15/2006

QUARLES & BRADY LLP
FIRSTAR PLAZA, ONE SOUTH PINCKNEY STREET
P.O. BOX 2113 SUITE 600
MADISON, WI 53701-2113

EXAMINER

HANDY, DWAYNE K

ART UNIT PAPER NUMBER

1743

DATE MAILED: 12/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/673,760

Applicant(s)

MCCORMICK ET AL.

Examiner

Dwayne K. Handy

Art Unit

1743

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 September 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 5-7 and 9-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 5-7 and 9-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 5-7 and 9-11 are rejected under 35 U.S.C. 102(e) as being anticipated by Butler et al. (6,589,726). Butler teaches a method and apparatus for insitu synthesis on a solid support. The solid supports utilize differences in surface tension in order to provide reaction sites. In column 10, lines 13-39, Butler teaches the formation of patterned hydrophilic and hydrophobic sites without the use of photoresist:

In addition to the use of photoresist in generating patterned hydrophilic and hydrophobic sites, surface tension arrays may be fabricated without the use of photoresist. For example, a solid support may be first reacted with a reagent to form hydrophilic sites. The hydrophilic sites may then be reacted in selected areas. The remaining hydrophilic sites may then be reacted with a reagent to form hydrophobic sites. The protected hydrophilic sites may then be deprotected to anchor in situ synthesis or to deposit chemical or biological entities. For example, a glass surface may be first reacted with a reagent to generate free hydroxyl or amino sites. **These hydrophilic sites may be reacted with a protected nucleoside coupling reagent or a linker to protect selected hydroxyl or amino sites. A protected nucleotide coupling reagent includes, for example, a DMT-protected nucleoside phosphoramidite, DMT-protected H-phosphonate, etc.** A linker may be of six or more atoms in length. The unprotected hydroxyl or amino sites may then be reacted with a reagent, for example, perfluoroalkanoyl halide, to form hydrophobic sites inert to in situ polynucleotide synthesis. The protected hydrophilic sites may be deprotected to anchor in situ polynucleotide synthesis. Variations of these procedures may also be used to fabricate a solid support surface such that solution of chemical or biological

Art Unit: 1743

entities at a derivatized site is spatially separated from solutions of chemical or biological entities at other derivatized sites.

The Examiner submits that an array having unprotected hydrophilic sites for reaction along with sites protected by phosphoramidate meets Applicant's limitation of a hydrophobic barrier surrounding each subarray of reactants. Later in column 10, lines 40-67, Butler recites the use of an ink-jet type dispenser to add reagents to the array.

Double Patenting

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4. Claims 5-7 and 9-11 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 16 of copending Application No. 10/674,768. Although the conflicting claims are not identical, they are

not patentably distinct from each other. Claim 16 of '768 contains every step of claims 5-7 and 9-11 except for the specific use of a synthesis instrument. Claim 16 recites a depositing step instead. It would have been obvious to one of ordinary skill in the art to use a dispensing instrument to deposit samples. One would use an instrument in order to automate the process or provide better accuracy in depositing the samples.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Response to Arguments

5. Applicant's arguments with respect to claims 5-7 and 9-11 have been considered but are moot in view of the new ground(s) of rejection. The rejection under Alfenito has been removed. The Examiner has provided a new rejection under Butler.

6. Applicant has argued that the Double Patenting rejection is improper because (1) the claims of the '768 application are directed to a method for loading samples and the instant claims are directed at methods for fabricating arrays with hydrophobic barriers; and (2) Hydrophobic barriers are optional in the '768 application. The first argument is a spurious argument. Although the preamble of claim 16 may be different than that of the instant claims, claim 16 of the '768 application still recites every step of the method of instant claims 5 and 9 except for the recitation of using the synthesis instrument. As for Applicant's contention that the hydrophobic barriers are merely optional in the '768

Art Unit: 1743

application – the Examiner respectfully disagrees. Claim 16 clearly contains a positive recitation of using the phosphoramidite group to form the hydrophobic boundary.


Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dwayne K. Handy whose telephone number is (571)-272-1259. The examiner can normally be reached on M-F 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on (571)-272-1267. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DKH
December 11, 2006


Jill Warden
Supervisory Patent Examiner
Technology Center 1700